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B8K KWX K2K1 K2M

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(56) Documents Cited

GB 2181881 A GB 1508227 A GB 1410020 A

EP 0243185 A WO 81/01905 A US 4977475 A

(58) Field of Search

UK CL (Edition L) B6E EDE, B8K KWC KWX, G5R

RB16

INT CL⁵ B42F, B65D, G11B

ONLINE DATABASES: WPI

(54) Packaging materials for dust-sensitive objects e.g. floppy disks

(57) A protective sleeve or dust jacket has inside surfaces 5, 6 which are embossed so as to provide indentations 7 forming recesses into which dust particles collect as an object is inserted into and removed from the sleeve or jacket. The edges of the indentations provide a wiping action on the object. The inside surfaces of the indentations may be roughened or contain a non-setting adhesive to enhance their ability to retain debris. The inside surfaces may also contain fibrous material 8 and have an anti-static coating. Suitable objects include computer disks, film negatives, lithographic masks and highly polished surfaces.

Fig.3.

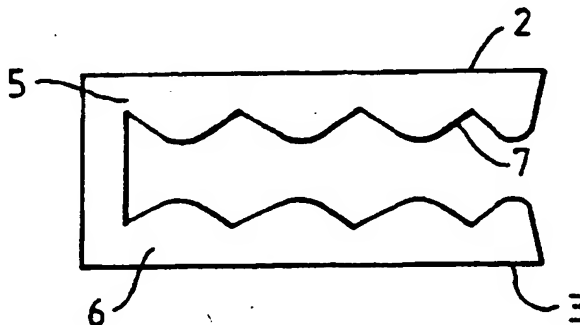
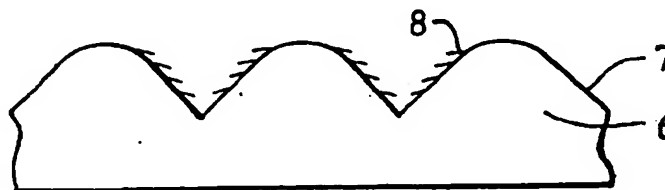


Fig.4.



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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Fig.1.

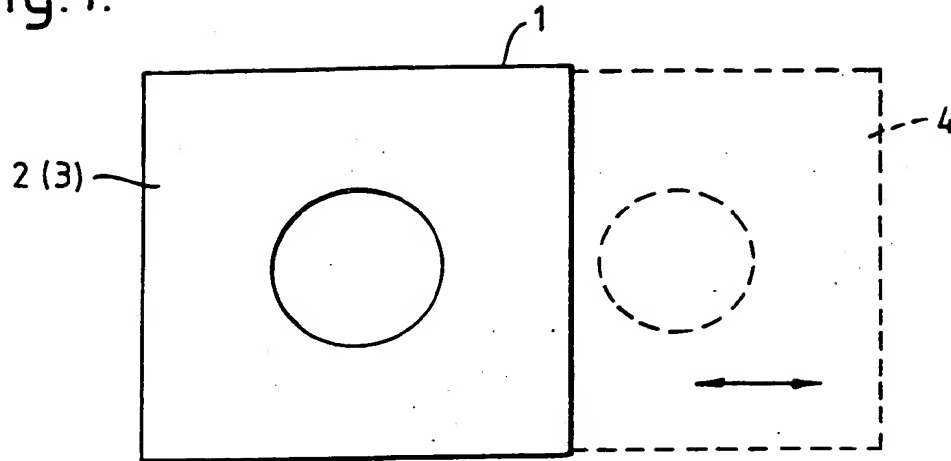
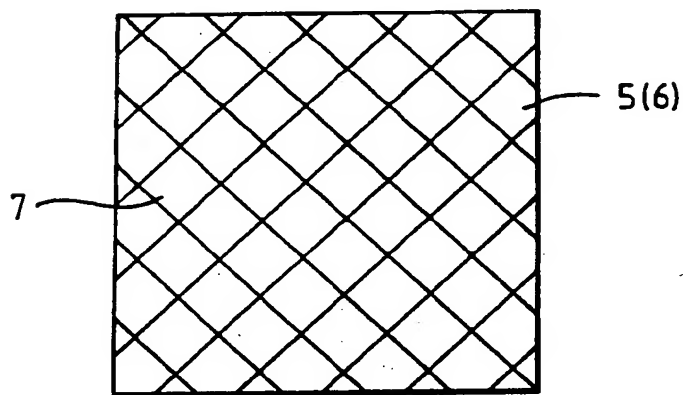


Fig.2.



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Fig.3.

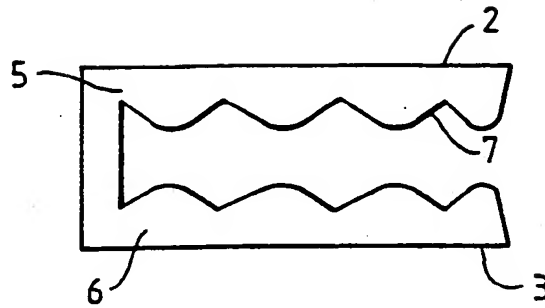


Fig.4.

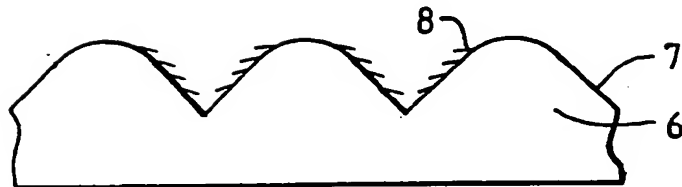
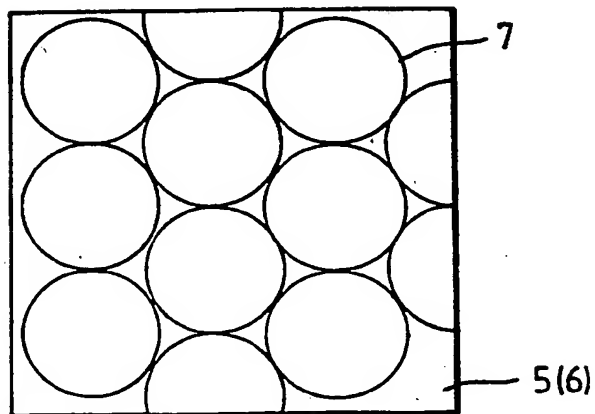


Fig.5.



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Packaging Materials

This invention relates to packaging materials.

Packaging materials used for protecting floppy disks and other similar delicate surfaces are often supplied with a protective sleeve or dust jacket to protect the object surface from dust and harmful matter in general. Over a period of time the amount of unwanted material can build up on the surface of the disk possibly affecting the quality of its performance and its lifetime.

This invention as claimed is intended to provide a remedy. It solves the problem of storing such items as floppy disks so that the surface remains relatively free from unwanted foreign bodies such as dust.

According to this invention a protective jacket comprises two facing sheets of material joined along at least part of their edges with an open section through which an object to be protected can be inserted, characterised in that the inside surface of at least one sheet has formed thereon a plethora of indentations forming recesses into which foreign bodies may collect as it is inserted into and removed from the protective jacket.

The object may be a removable computer disk, a compact disk, film negative, lithographic mask, a highly polished surface and the like.

The invention will now be described by way of example only with reference to the accompanying drawings in which:-

Fig. 1 is an illustration of a computer-disk jacket.

Fig. 2 is a plan view of a cleaning surface.

Fig. 3 is a side view, in section, of the packaging material.

Fig. 4 is an enlarged view of the embossed surface highlighting some indentations.

Fig. 5 is a plan view of an alternative form of cleaning surface.

Figures 1-5 show packaging material for objects that require protection from foreign bodies such as dust particles. The invention comprises a sleeve 1 of two facing sheets 2, 3 of material joined along at least part of their edges with an open section through which an object 4 to be protected can be inserted or removed. On at least one of the inside surfaces of the sleeve 1 are embossed surfaces 5, 6 which consist of a plethora of indentations 7 which may be regularly or irregularly spaced and of any shape. The inside surfaces of the indentations may contain fibrous material 8 either randomly orientated or pointing in a particular direction so that any debris may be retained in the indentation or cavity 7. The inside surfaces of the indentations may also be rough or contain some non-setting adhesive so that any debris collected is retained. In order that the surface of the object is not damaged when placed into or removed from the packaging material the edges of the embossed material that come into contact with the object surface may be smooth. The inside surfaces 5, 6 of the sleeve 1 may be coated with an anti-static material.

The embossed surface may be introduced onto the packaging in a number of ways including the attachment of a lattice-type structure to a supporting material which may be of a fibrous nature, or by pressing out the cavities on package material.

CLAIMS

1. A protective jacket comprising two facing sheets of material joined along at least part of their edges with an open section through which an object to be protected can be inserted, characterised in that the inside surface of at least one sheet has formed thereon a plethora of indentations forming recesses into which foreign bodies may collect.
2. A device as claimed in claim 1 wherein the edges of the indentations which come into contact with the object provide a wiping action on the object as it is inserted and removed.
3. A device as claimed in claim 1 wherein the recessed areas contain a fibrous material which may be either randomly orientated or pointing in a particular direction so that any debris may be retained in the indentations or recesses.

4. A device as claimed in claim 1 wherein the recessed areas are in a roughened state compared to the edges of the indentations which come into contact with the object material.
5. A device as claimed in claim 1 wherein the inside surfaces of the protective jacket are coated in an anti-static material.

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

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Relevant Technical fields

(i) UK Cl (Edition K) B6E (EDE); B8K (KWC, KWX)
G5R (RB16)

(ii) Int Cl (Edition 5) B42F; B65D; G11B

Search Examiner

G J W RUSSELL

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASES: WPI

Date of Search

15 SEPTEMBER 1993

Documents considered relevant following a search in respect of claims 1-5

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2181881 A (BASF) see cleaning fleece (10) and page 2 lines 71-75 for anti-static coating	1-3, 5
X	GB 1508227 (MINNESOTA MINING) see porous wiping fabric (14)	1-3
X	GB 1410020 (ICI) see page 1 lines 49-51 and lines 76-90 and page 2 lines 5-9	1-3, 5
X	EP 0243185 (HITACHI MAXELL) see embossed cleaning sheet on page 13 lines 16-26 and Figure 5	1-3
X	WO 81/01905 (MINNESOTA MINING) see fibre-flocked cleaning sheet and page 3 line 32 - page 4 line 2	1-3, 5
X	US 4977475 (TDK) see smooth, fibrous, net-like layer (14) as shown in Figures 1 and 2	1-3

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).